Eureka Math *A Story of Units*
Third Grade – Module 4
2015-2016

Table of Contents

Materials based on Eureka Math Version 3.

Module Assessment Overview

Purpose of Assessments

Mid-Module Assessment: These tasks address approximately the **first half** of the module's learning objectives, and provide important information for instruction and for grading.

End-of-Module Assessment: These tasks are based on all standards addressed in order to gauge students' full range of understanding of the **module as a whole**. The End-of-Module assessment should carry more weight than the Mid-Module Assessment in terms of student grades in the appropriate domain.

Administration of Assessments

- Mid- and End-of-Module Assessments are designed to be completed in approximately one class period. However, The tests can be given over multiple days as needed.
- Assessments are designed to be completed independently by students, without assistance.
- These tasks should not be preceded by review of similar problems.

Grading Guidance

The grading scale on Elementary Report Cards has been changed for 2015-2016 and beyond. Please note that ***4 now indicates advanced understanding of grade level standards expected at this time of year.***

4 – Advanced: Student demonstrates advanced understanding of grade level standards expected at this time of year.
3 – Proficient: Student demonstrates proficiency with grade level standards expected at this time of year.
2 – Basic: Student demonstrates basic understanding of grade level standards expected at this time of year. Student needs additional support and practice.
1 – Below Basic: Student demonstrates minimal understanding of grade level standards expected at this time of year. Student needs significant support and practice.

Rubrics and Checklists have been updated to reflect this change. Rubrics have been further modified from Eureka Math originals for clarity, accuracy, and alignment to Bethel's grade scale.

General Grading Guidance:

- On the report card, student learning is reported by CCSS domain. The Third Grade CCSS domains are: Operations and Algebraic Thinking, Number and Operations in Base Ten, Number and Operations – Fractions, Measurement and Data, and Geometry.
- Grades in each domain should be based on multiple sources of evidence, including the Mid- and End-of-Module Assessments. The End-of-Module assessment should carry more weight than the Mid-Module Assessment in terms of student grades in the appropriate domain.

Module 4 Grading Guidance:

- The standards assessed in Module 4 will not be assessed again. See checklist on page 3.

Updates

Bethel provided Eureka Math Teacher Editions based on Version 2 of Eureka. Eureka is continuing to revise the curriculum, and Version 3 is being released this year. Version 3 Assessments are considered when updates provide additional support for students and/or closer alignment to standards.

- Bethel is using the Version 3 Mid-Module Assessment for Module 4 due to increased scaffolding for students on item number 4. Otherwise, there were no changes to the Module 4 Assessments.

Grade 3 Common Core State Standards Checklist by Module

This grade-level chart provides an at-a-glance view of when each standard is addressed. **Shaded boxes indicate standards that are first assessed in Module 4.** *Note that standards included in major clusters are followed by an asterisk (*).* Please refer to the Curriculum Overview of *A Story of Units* for a curriculum map and detailed grade-level descriptions including a summary of the year, a rationale of the module sequence, and a standards alignment chart.

CCSS		GRADE 3 MODULES						
		1	2	3	4	5	6	7
3.OA	1*	X						
	2*	X						
	3*	X		X				
	4*	X		X				
	5*	X		X				
	6*	X						
	7*	X	X	X				
	8*	X		X				
	9*			X				
3.NBT	1		X					
	2		X					
	3			X				
3.NF	1*					X		
	2a*					X		
	2b*					X		
	3a*					X		
	3b*					X		
	3c*					X		
	3d*					X		
3.MD	1*		X					
	2*		X					
	3						X	
	4						X	X
	5a*				X			
	5b*				X			
	6*				X			
	7a*				X			
	7b*				X			
	7c*				X			
	7d*				X			
	8							X
3.G	1							X
	2					X		

Third Grade Module 4: Mid-Module Assessment Task Score Sheet

A Progression of Learning

A Progression of Learning is provided to describe steps that illuminate the gradually increasing understandings that students develop *on their way to proficiency.* In this chart, this progress is presented from left to right. The learning goal for each student is to move to the last step, "Evidence of solid reasoning with a correct answer". These steps are meant to help teachers and students identify and celebrate what the student CAN do now, and what they need to work on next.

Score Key: A Progression of Learning			
Little or no evidence of reasoning with an incorrect answer. (1 Point)	Evidence of some reasoning with an incorrect answer. (2 Points)	Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)	Evidence of solid reasoning with a correct answer. (4 Points)

	Module 4: Mid-Module Assessment						
	Domain	**Standards**					
Question	Measurement and Data	3.MD.5a	3.MD.5b	3.MD.6	3.MD.7a	3.MD.7b	3.MD.7d
1	1 2 3 4	X	X	X			
2	1 2 3 4					X	
3	1 2 3 4					X	
4	1 2 3 4	X	X	X	X		
5	1 2 3 4	X	X		X		X

Domain Score	Measurement and Data	
Total Points		
Level	4	18-20 points
	3	13-17 points
	2	8-12 points
	1	5-7 points

Note: For more information about standards assessed in this module, see back of this score sheet.

Notes:

Third Grade Module 4: Mid-Module Assessment Task Score Sheet (continued)

Mid-Module Assessment Task (Topics A–B) Clusters and Standards Addressed
Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.
a. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
b. A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.
3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
3.MD.7 Relate area to the operations of multiplication and addition.
a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

Third Grade Module 4: Mid-Module Assessment Task Rubric

A Progression of Learning				
Assessment Task Item and Standards Assessed	**STEP 1 Little or no evidence of reasoning with an incorrect answer. (1 Point)**	**STEP 2 Evidence of some reasoning with an incorrect answer. (2 Points)**	**STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)**	**STEP 4 Evidence of solid reasoning with a correct answer. (4 Points)**
1 **3.MD.5** **3.MD.6**	Student correctly answers **0-1** of the six parts.	Student correctly answers **2-3** of the six parts.	Student correctly answers **4-5** of the six parts.	Student correctly answers **6** of the six parts. (See below.)
	a. **(1)** Jasmine's array, **(2)** giving strong evidence of understanding that tiling must have no gaps or overlaps. b. **(3)** The area is 24 tiles. **(4)** Provides appropriate explanation of the calculation, for example counting or skip-counting strategies. c. **(5)** Yes, **(6)** there are 4 rows of 6 squares (or 6 rows of 4 squares), so it is possible to skip-count by six.			
2 **3.MD.7b**	Student correctly answers **0-1** of the six parts.	Student correctly answers **2-3** of the six parts.	Student correctly answers **4-5** of the six parts.	Student correctly answers **6** of the six parts. (See below.)
	Identifies rectangles: **(1)** 1 × 12 or 12 × 1 **(2)** 2 × 6 or 6 × 2 **(3)** 3 × 4 or 4 × 3 **(4)** Response shows evidence that rectangles can have different side lengths but the same area using pictures, **(5)** numbers, and **(6)** words.			
3 **3.MD.7b**	Student correctly answers **0-1** of the four parts.	Student correctly answers **2** of the four parts.	Student correctly answers **3** of the four parts.	Student correctly answers **4** of the four parts. (See below.)
	(1) Finds the missing side length of 8 unit **(2)** Shows evidence of solid reasoning using pictures, **(3)** numbers, and **(4)** words.			
4 **3.MD.5** **3.MD.6** **3.MD.7a**	Student correctly answers **0-1** of the four parts.	Student correctly answers **2** of the four parts.	Student correctly answers **3** of the four parts.	Student correctly answers **4** of the four parts. (See below.)
	a. **(1)** Completes the array with 8 columns and 6 rows. b. **(2)** Writes one of the following skip-count sequences: 6, 12, 18, 24, 30, 36, 42 OR 8, 16, 34, 32, 40, 48 c. **(3)** Writes a multiplication equation (6 × 8 or 8 × 6); **(4)** Gives an area of 48 sq. units			

Assessment Task Item and Standards Assessed	STEP 1 Little or no evidence of reasoning with an incorrect answer. (1 Point)	STEP 2 Evidence of some reasoning with an incorrect answer. (2 Points)	STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)	STEP 4 Evidence of solid reasoning with a correct answer. (4 Points)
5 3.MD.5a 3.MD.5b 3.MD.7a 3.MD.7d	Student is unable to correctly answer any parts.	Student correctly answers **1** of the three parts.	Student correctly answers **2** of the three parts.	Student correctly answers **3** of the three parts. (See below.)
	a. **(1)** Identifies that 16 tiles/square units are needed to fill the remaining area. b. **(2)** Says the area of the large rectangle is 32 square units. **(3)** Explanation gives evidence of solid reasoning to support answer. **NOTE: Allow credit for an incorrect answer in part b (2) based on an incorrect answer to part a. Also allow credit for solid reasoning in part b (3) to support part b (2).**			

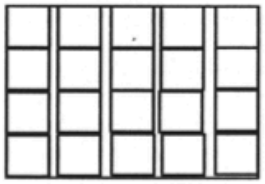
Third Grade Module 4: Mid-Module Assessment Task Key

Name Gina Date

1. Jasmine and Roland each use unit squares to tile a piece of paper. Their work is shown below.

Jasmine's Array

Roland's Array



a. Can one of the arrays be used to correctly measure the area of the piece of paper? If so, whose array would you use? Explain why.

Jasmine's array correctly measures the area of the piece of paper. You can't have gaps or overlaps when you tile or it won't be right.

b. What is the area of the piece of paper? Explain your strategy for finding the area.

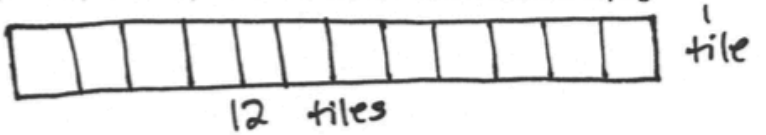
Area = 4 units x 6 units
= 24 sq units
I multiplied the side lengths, 4 units x 6 units, to get the area, 24 sq units.

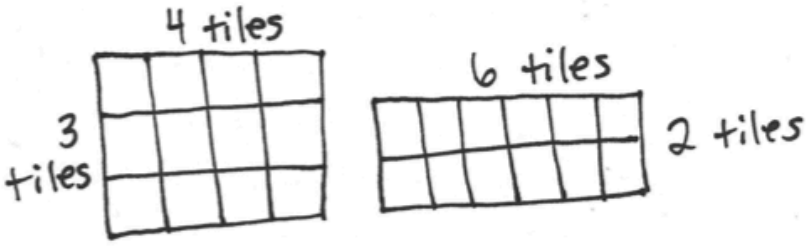
c. Jasmine thinks she can skip-count by sixes to find the area of her rectangle. Is she correct? Explain why or why not.

Yes, Jasmine is correct. There are 4 rows of six unit squares, so she can skip-count: 6, 12, 18, 24. It's faster if she multiplies.

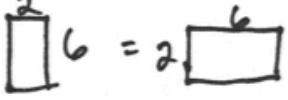
Third Grade Module 4: Mid-Module Assessment Task Key (continued)

2. Jaheim says you can create three rectangles with different side lengths using 12 unit squares. Use pictures, numbers, and words to show what Jaheim is saying.

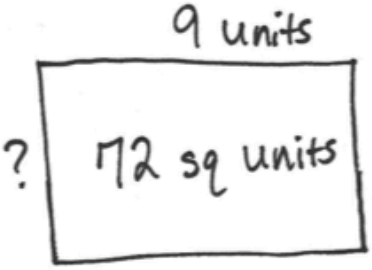




Jaheim is correct. These are the only rectangles you can make with 12 tiles. You can turn them, but they will be the same:



3. The area of a rectangle is 72 square units. One side has a length of 9 units. What is the other side length? Explain how you know using pictures, equations, and words.



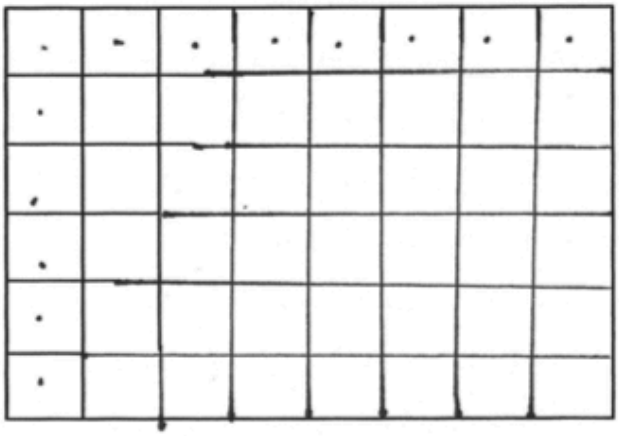
$? \times 9 = 72$

$72 \div 9 = 8$

If one side length is 9 units, the other side length is 8 units because $8 \times 9 = 72$.

Third Grade Module 4: Mid-Module Assessment Task Key (continued)

4. Jax started to draw a grid inside the rectangle to find its area.
   a. Use a straight edge to complete the drawing of the grid.
   b. Write a skip-count sequence you could use to find the area.



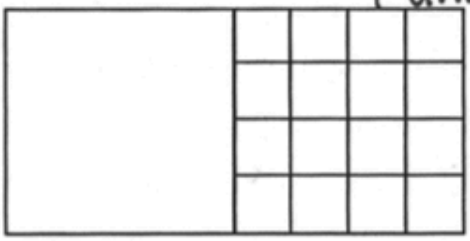
8, 16, 24, 32, 40, 48

48 sq units

   c. Write a multiplication equation that you could use to find the area, and then solve.

8 units x 6 units = 48 sq units

5. Half of the rectangle below has been tiled with unit squares.



4 x 4 = 16

Area = 16 sq units

   a. How many more unit squares are needed to fill in the rest of the rectangle?

If there are 16 sq units in one half, there will be 16 sq units in the other half too. You need 16 more unit squares to fill it in.

   b. What is the total area of the large rectangle? Explain how you found the area.

16 sq units + 16 sq units = 32 sq units
I added the 2 halves together to find the total area.

Third Grade Module 4: End-of-Module Assessment Task Score Sheet

A Progression of Learning

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Score Key: A Progression of Learning			
Little or no evidence of reasoning with an incorrect answer. (1 Point)	Evidence of some reasoning with an incorrect answer. (2 Points)	Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer. (3 Points)	Evidence of solid reasoning with a correct answer. (4 Points)

	Module 4: End-of-Module Assessment							
	Domain	**Standards**						
Question	Measurement and Data	3.MD.5a	3.MD.5b	3.MD.6	3.MD.7a	3.MD.7b	3.MD.7c	3.MD.7d
1	1 2 3 4						X	X
2	1 2 3 4		X	X	X	X		
3	1 2 3 4					X		X
4	1 2 3 4	X	X			X		X

Domain Score	Measurement and Data	
Total Points		
Level	4	14-16 points
	3	10-13 points
	2	6-9 points
	1	4-5 points

Note: For more information about standards assessed in this module, see back of this score sheet.

Notes:

Third Grade Module 4: End-of-Module Assessment Task Score Sheet (continued)

End-of-Module Assessment Task (Topics A–D) Clusters and Standards Addressed
Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement. a. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. b. A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.
3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
3.MD.7 Relate area to the operations of multiplication and addition. a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning. d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

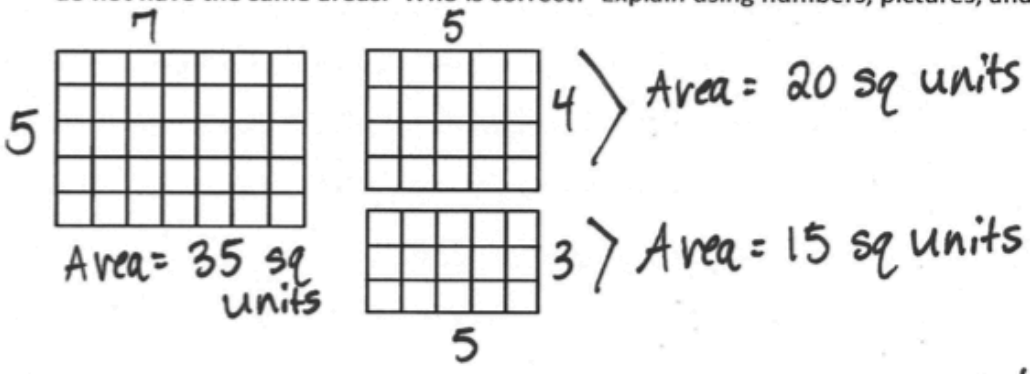
Third Grade Module 4: End-of-Module Assessment Task Rubric

A Progression of Learning				
Assessment Task Item and Standards Assessed	**STEP 1 Little or no evidence of reasoning with an incorrect answer.** **(1 Point)**	**STEP 2 Evidence of some reasoning without a correct answer or with a partially correct answer in a multi-step question.** **(2 Points)**	**STEP 3 Evidence of some reasoning with a correct answer or evidence of solid reasoning with an incorrect answer.** **(3 Points)**	**STEP 4 Evidence of solid reasoning with a correct answer.** **(4 Points)**
1 **3.MD.7c** **3.MD.7d**	Response demonstrates little or no evidence of reasoning without a correct answer.	Student identifies that Sarah is correct, demonstrating evidence of limited reasoning to support the answer.	Student identifies that Sarah is correct. Response shows evidence of accurate reasoning to support the answer using at least one representation.	Student identifies that Sarah is correct. Explanation shows evidence of solid reasoning using multiple representations.
2 **3.MD.5b** **3.MD.6** **3.MD.7a** **3.MD.7b**	Student correctly answers **0-1** of the six parts.	The student correctly answers **2-3** of the six parts.	The student correctly answers **4-5** of the six parts.	The student correctly answers **6** of the six parts. (See below.)
	(1, 2, 3) Student correctly draws and labels three different arrays. Side lengths are labeled in inches. **(4, 5, 6)** Correct multiplication sentences are shown for each array drawn. Possible arrays are as follows: 1 × 36 2 × 18 3 × 12 4 × 9 6 × 6			
3 **3.MD.7d** **3.MD.7b**	Student correctly answers **0-1** of the five parts.	Student correctly answers **2** of the five parts.	Student answers **3-4** of the five parts correctly.	Student answers **5** of the five parts correctly. (See below.)
	▪ **(1)** House A = 102 sq meters; **(2)** Correct calculations ▪ **(3)** House B = 84 sq meters; **(4)** Correct calculations ▪ **(5)** Explanation identifies that House A has the greater area. Response provides evidence of solid reasoning.			
4 **3.MD.5** **3.MD.7b** **3.MD.7d**	Student correctly answers **0-1** of the six parts.	Student correctly answers **2-3** of the six parts.	Student correctly answers **4-5** of the six parts.	Student correctly answers **6** of the six parts. (See below.)
	a. Labels length and width of rectangles A and B, including the following units: ▪ **(1)** A = 3 m × **7 m** ▪ **(2)** B = **3 m** × **10 m** b. Calculates the area of each rectangle as follows: ▪ **(3)** A = 21 sq meters ▪ **(4)** B = 30 sq meters ▪ **(5)** C = 60 sq meters c. **(6)** Calculates the total area as 111 sq meters. **NOTE: Allow credit in part c for a correct calculation based on incorrect calculations in part b.**			

Third Grade Module 4: End-of-Module Assessment Task Key

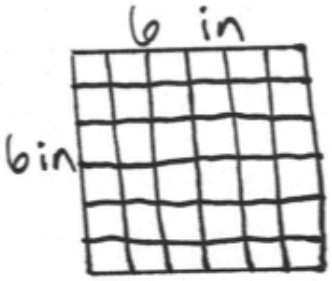
Name Gina Date

1. Sarah says the rectangle on the left has the same area as the sum of the two on the right. Pam says they do not have the same areas. Who is correct? Explain using numbers, pictures, and words.

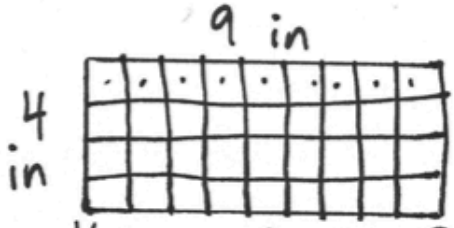


Sarah is correct. The two on the right add up to 35 sq units, which is the area of the one on the left.

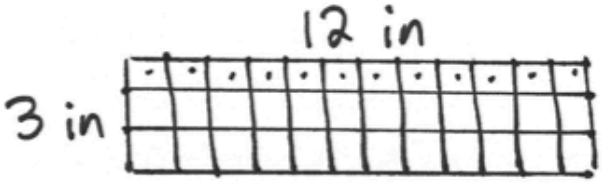
2. Draw three different arrays that you could make with 36 square inch tiles. Label the side lengths on each of your arrays. Write multiplication sentences for each array to prove that the area of each array is 36 square inches.



6in x 6 in = 36 sq in



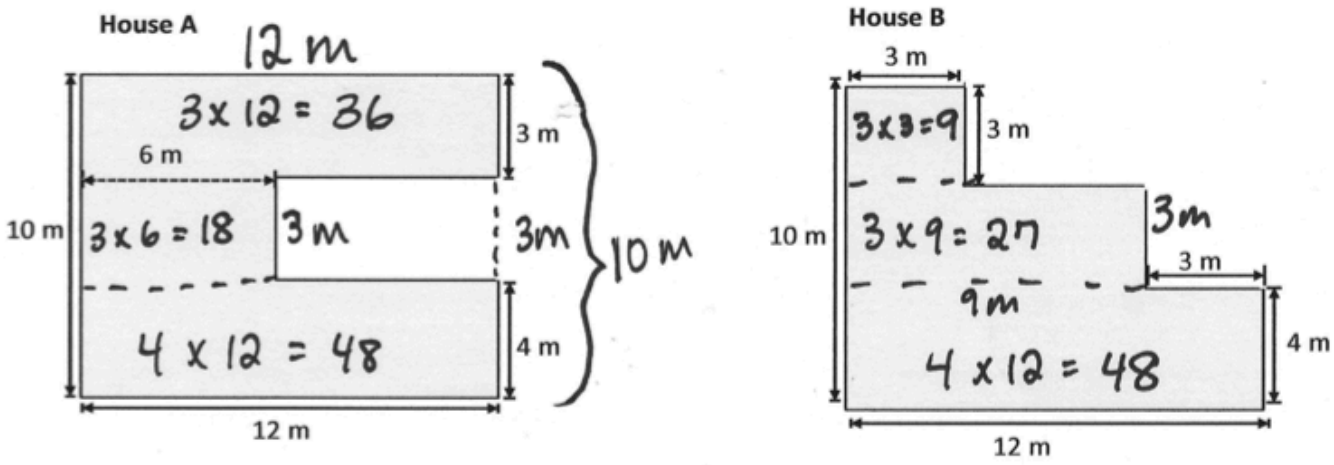
4 in x 9 in = 36 sq in



3 in x 12 in = 36 sq in

Third Grade Module 4: End-of-Module Assessment Task Key (continued)

3. Mr. and Mrs. Jackson are buying a new house. They are deciding between the two floor plans below.



Which floor plan has the greater area? Show how you found your answer on the drawings above. Show your calculations below.

House A:

36 + 18 + 48

40 + 14

54 + 48

52 + 50

= 102

Area: 102 sq m

House B:

9 + 27 + 48

6 + 30

36 + 48

34 + 50

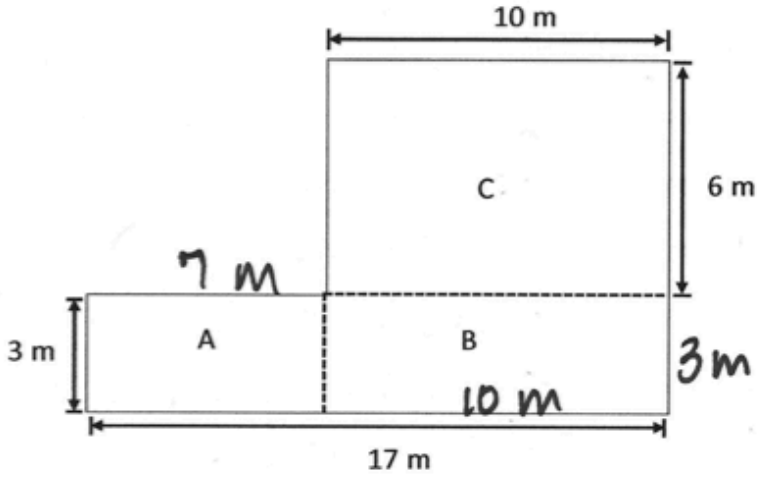
= 84

Area: 84 sq m

House A has the greater area because it is 102 square meters and House B is only 84 square meters.

Third Grade Module 4: End-of-Module Assessment Task Key (continued)

4. Superior Elementary School uses the design below for their swimming pool. Shapes A, B, and C are rectangles.



a. Label the side lengths of Rectangles A and B on the drawing.

b. Find the area of each rectangle.

A: 3 m x 7 m = 21 sq m

B: 3 m x 10 m = 30 sq m

C: 6 m x 10 m = 60 sq m

c. Find the area of the entire pool. Explain how you found the area of the pool.

21 sq m + 30 sq m + 90 sq m

21 sq m + 90 sq m

111 sq m

The area of the pool is 111 square meters. I found the area by adding the areas of all 3 parts.